Table of Contents

The Suffolk County Water Authority

Class 1 Underground Injection Control (UIC)

Permit Number NYU010002 UIC I.D. Number 04NY10326067

C. Monitoring

D. Reporting

E. Plugging and Abandonment

F. Financial Responsibility

Attachments:

1. Plugging and Abandonment Plan

2. Financial Responsibility

3. Monitoring Wells

U.S. ENVIRONMENTAL PROTECTION AGENCY

UNDERGROUND INJECTION CONTROL (UIC) PERMIT:

Class I Nonhazardous **Permit Number NYU01002**

UIC I.D. Number 04NY10326067

Pursuant to the Underground Injection Control regulations of the U.S. Environmental Protection Agency (EPA), codified at Title 40 of the Code of Federal Regulations, Parts 124, 144, 146, and 147, the Suffolk County Water Authority (SCWA) Production Control Department, 180 Fifth Avenue, Bay Shore, New York, is hereby authorized to construct and operate one (1) Class I Nonhazardous nitrate removal waste disposal well, Brown's Hill Road injection well, to inject nitrate containing spent brine into the confined Salt Water Aquifer. The facility is known as the SCWA Brown's Hill Road Well Field and Pump Station at 41°09'06" latitude/ 72°17'12" longitude, Orient, Town of Southold, Westhampton District, Suffolk County, New York. Injection into the well shall not commence until the operator has received written authorization from the Director to inject. *Director* is defined in Part I., Section L, Item 19, of this Permit.

All references to Title 40 of the Code of Federal Regulations are to all regulations that are in effect on the date that this permit is effective. The following attachments are incorporated into this permit:

(1) Plugging and Abandonment Plan

(2) Financial Responsibility Attachment

(3) Monitoring Wells

The final permit shall become effective on _____. This permit and the authorization to inject shall expire at midnight on ten (10) years after the effective date, unless terminated. It will expire, also, upon delegation of primary enforcement responsibility to the State of New York, unless that State chooses to adopt this permit as a State permit.

Proposed this _____ day of _____ 2008.

_____

Dore LaPosta

Director

Division of Enforcement and Compliance Assistance

PART I.

GENERAL PERMIT COMPLIANCE

A. EFFECT OF PERMIT

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit. Notwithstanding any other provision of this permit, the permittee authorized by this permit shall not construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 C.F.R. Part 142 or may otherwise adversely affect the health of persons. Any underground injection activity not specifically authorized in this permit is prohibited. Compliance with this permit during its term constitutes compliance with Part C of the Safe Drinking Water Act (SDWA). Such compliance does not constitute a defense to any action brought for violation of Section 1431 of the SDWA, or any other common or statutory law or regulation. Issuance of this permit does not convey property rights of any sort or any exclusive privilege, nor does it authorize any injury to persons or property, any invasion of other private

rights, or any infringement of State or local law or regulations. Nothing in this permit shall be construed to relieve the permittee of any duties under applicable regulations.

B. PERMIT ACTIONS

1. Modification, Revocation, Re-issuance and Termination

The Director may, for cause or upon request from the permittee, modify, revoke and reissue, or terminate this permit in accordance with 40 C.F.R. §§144.12, 144.39, and 144.40. Also, the permit is subject to minor modifications for cause as specified in 40 C.F.R. §144.41. The filing of a request for a permit modification, revocation and re-issuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the permittee, does not stay the applicability or enforceability of any permit condition.

2. Transfer of Permits

This permit is not transferable to any person except in accordance with 40 C.F.R. §144.38.

C. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

D. CONFIDENTIALITY

In accordance with 40 C.F.R. Part 2 and §144.5, any information submitted to EPA pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the validity of the claim will be assessed in accordance with the procedures in 40 C.F.R. Part 2 (Public Information). Claims of confidentiality for the following information will be denied:

1) The name and address of the permittee;

2) Information which deals with the existence, absence or level of contaminants in drinking water.

E. DUTIES AND REQUIREMENTS

1. Duty to Comply

The permittee shall comply with all applicable UIC Program regulations and conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued in accordance with 40 C.F.R. §144.34. Any permit noncompliance constitutes a violation of the SDWA and is grounds for enforcement action, permit termination, revocation and re-issuance, modification, or for denial of a permit renewal application.

2. Penalties for Violations of Permit Conditions

Any person who violates a permit requirement is subject to civil penalties, fines, and other enforcement action under the SDWA and may be subject to such actions pursuant to the Resource Conservation and Recovery Act (RCRA). Any person who willfully violates permit conditions may be subject to criminal prosecution.

3. Continuation of Expiring Permits

a. Duty to Reapply - If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must submit a complete application for a new permit at least 180 business days before this permit expires.

b. Permit Extensions - The conditions of an expired permit may continue in force only in accordance with 5 U.S.C. 558(c) and 40 C.F.R. §144.37.

c. Effect - Permits continued under 5 U.S.C. 558(c) and 40 C.F.R. §144.37 remain fully effective and enforceable.

d. Enforcement - When the permittee is not in compliance with the conditions of the expiring or expired permit, the Director may choose to do any or all of the following:

(1) Initiate enforcement action based upon the permit which has been continued;

(2) Issue a notice of intent to deny the new permit. If the permit is denied, the owner or operator would then be required to cease the

activities authorized by the continued permit or be subject to enforcement action for operating without a permit;

(3) Issue a new permit under 40 C.F.R. Part 124 with appropriate conditions; or

(4) Take other actions authorized by Underground Injection Control regulations.

e. State Continuation - An EPA-issued permit does not continue in force beyond its expiration date under Federal law if at that time a State has primary enforcement authority for the UIC Program, under the SDWA. A State authorized to administer the UIC program may continue either EPA- or State-issued permits until the effective date of the new permits, if State law allows. Otherwise, the facility or activity is operating without a permit from the time of expiration of the old permit to the effective date of the State-issued new permit. Furthermore, if the State does not continue an EPA permit upon obtaining primary enforcement responsibility, the permittee must obtain a State permit or be authorized to inject by State rule.

4. Need to Halt or Reduce Activity not a Defense

It shall not be a defense, for a permittee in an enforcement action, that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

6. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

7. Duty to Provide Information

The permittee shall furnish to the Director, within a time specified, any information that the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

8. Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the SDWA, any substances or parameters at any location.

9. Records

a. The permittee shall retain records and all monitoring information, including all calibration and maintenance records and any original strip chart or other recordings for continuous monitoring instrumentation of injection rate and volume, and copies of all reports required by this permit, for a period of at least five years from the date of the sample, measurement, or report.

b. The permittee shall maintain records of all data required to complete the permit application form for this permit and any supplemental information submitted under 40 C.F.R. §144.31 for a period of at least five years from the date the application was signed. These periods may be extended by request of the Director at any time.

c. The permittee shall retain records concerning the nature and composition of all injected fluids until three years after the completion of plugging and abandonment

which has been carried out in accordance with the attached plugging and abandonment plan, and is consistent with 40 C.F.R. §146.10.

d. The permittee shall continue to retain such records after the retention period specified by paragraphs a. to c. above, unless he delivers the records to the Director or obtains written approval from the Director to discard the records.

e. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;

(2) The individual(s) who performed the sampling or measurements;

(3) A precise description of sampling methodology and the preservation, handling, and custody of samples;

(4) The date(s) sampling and analyses were performed;

(5) The names of individual(s) who performed the analyses;

(6) The analytical techniques or methods used; and

(7) The results of such analyses, including results for associated quality control samples.

10. Monitoring

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Monitoring results shall be reported at the intervals specified in Part II, Section D, of this permit. Monitoring of the nature of injected fluids shall comply with applicable analytical methods cited and described in Table I of 40 C.F.R. §136.3 or in Appendix III of 40 C.F.R. Part 261 or by other EPA-approved methods, or by other methods that have been approved in advance by the Director.

11. Signatory Requirements

All reports or other information, required to be submitted by this permit or requested by the Director, shall be signed and certified in accordance with 40 C.F.R. §144.32.

12. Reporting Requirements

a. Planned Changes - The permittee shall give written notice to the Director, as soon as possible, of any planned physical alterations or additions to the permitted facility.

b. Anticipated Noncompliance - The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

c. Compliance Schedules - Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 business days following each schedule date.

d. Twenty-four Hour Reporting -

(1) The permittee shall report to the Director any noncompliance that may endanger health or the environment. Any such information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. Such reports shall include, but not be limited to, the following information:

(a) Any monitoring or other information that indicates that any contaminant may cause an endangerment to an underground source of drinking water; and

(b) Any noncompliance with a permit condition, or malfunction of the injection system, that may cause fluid migration into or between underground sources of drinking water so as to cause a violation of primary drinking water regulations under 40 C.F.R. Part 142 or otherwise adversely affect the health of persons.

(2) A written submission shall also be provided within five business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

e. Other Noncompliance - The permittee shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted. The reports shall contain the information listed in Section I.E.12.d.(2) above.

f. Other Information - When the permittee becomes aware that he failed to submit any relevant facts in the permit application or submitted incorrect information in a permit application or in any report to the Director, the permittee shall submit such facts or information within 10 business days.

g. Conversion - The permittee shall notify the Director 45 business days prior to the conversion of any well(s) to an operating status other than an injection well.

h. Report on Permit Review - Within 30 business days of the effective date of this permit, the permittee shall report to the Director that he has read and is personally familiar with all terms and conditions of this permit.

i. The permittee shall contact the Chief, Ground Water Compliance Section at (212) 637-4232.

F. COMMENCING INJECTION

An operator may not commence injection until:

a. The following information concerning the injection formation has been submitted to the Director:

(1) temperature

(2) other physical and chemical characteristics of the injection matrix, as referenced in Part II A.5; and

(3) physical and chemical characteristics of the formation fluids, as referenced in Part II A. 3 & 4.

b. Mechanical integrity of the well has been demonstrated in accordance with Section H of Part I of this document;

c. Construction is complete, and the permittee has submitted to the Director, by Certified Mail with return receipt requested, a notice of completion of construction using EPA Forms 7520-9, and either:

(1) The Director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or

(2) The permittee has not received, within 13 business days of the date of the Director's receipt of the notice required above, notice from the Director of his or her intent to inspect or otherwise review the new injection well, in which case prior inspection or review is waived and the permittee may commence injection.

G. PLUGGING AND ABANDONMENT

1. Notice of Plugging and Abandonment

The permittee shall notify the Director no later than 45 business days before conversion or abandonment of the well.

2. Plugging and Abandonment

The permittee shall plug and abandon the well consistent with 40 C.F.R. §146.10, as provided for in Attachment # 1, the Plugging and Abandonment Plan, which is hereby incorporated into this permit.

Within 60 business days after plugging the well, or at the time of the next report after plugging the well (whichever is shorter), the permittee shall submit a report to the Director. The report shall be certified as accurate by the person who performed the plugging operation and shall consist of either:

a. A statement that the well was plugged in accordance with the plan previously approved by the Director; or

b. If the actual plugging differed from the approved plan, a statement defining the actual plugging and why the Director should approve such deviation. Any deviation from a previously approved plan that may endanger USDWs is cause for the Director to require the operator to re-plug the well.

3. Inactive Wells

After a cessation of injection for two years the permittee shall plug and abandon the well in accordance with the plan unless the permittee:

a. Has provided notice to the Director; and

b. Has described actions or procedures, deemed satisfactory by the Director, that the permittee will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived, in writing, by the Director.

H. MECHANICAL INTEGRITY

1. Standards

All injection well(s) must have and maintain mechanical integrity consistent with 40 C.F.R. §§146.8 and 146.12(c).

2. Prohibition Without Demonstration

The permittee shall not commence injection into the new well after the effective date of this permit unless the permittee has demonstrated that the well covered by this permit has mechanical integrity in accordance with 40 C.F.R. §146.8 and 146.12(c).; and the permittee has received written notice from the Director that such demonstration is satisfactory.

3. Subsequent Mechanical Integrity Demonstrations

A demonstration of mechanical integrity in accordance with 40 C.F.R. §146.8 and 146.12(c) shall be made no later than five years from the date of the last approved demonstration. Mechanical integrity shall also be demonstrated by injecting potable water into the well through two inch diameter pipe, with inflatable seals at the bottom and top of the well casing. By monitoring the water pressure inside the well during and after the injection, any casing leaks should be determined. The permittee shall notify the Director of his intent to demonstrate mechanical integrity at least 30 business days prior to such demonstration. The permittee shall report the results of a mechanical integrity demonstration within 90 business days after completion.

4. Loss of Mechanical Integrity

If the permittee or the Director finds that the well fails to demonstrate mechanical integrity during a test, or a loss of mechanical integrity as defined by 40 C.F.R. §146.8 becomes evident during operation, the operation shall be halted immediately and not be resumed until the Director gives approval to recommence injection. Any loss of mechanical integrity is considered noncompliance and is subject to the reporting requirements found in Part I., Section E., Item 12 d(1) and (2), of this permit.

5. Mechanical Integrity Request from Director

The Director may, by written notice, require the permittee to demonstrate mechanical integrity at any time.

I. FINANCIAL RESPONSIBILITY

1. Financial Responsibility

The permittee is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner consistent with the Underground Injection Control regulations (40 C.F.R. §144.52(a)(7)). The financial statement, demonstrating financial responsibility, shall be updated annually, or upon request of the Director, Attachment #2. If the instruments and/or terms of the financial demonstration should change the permittee shall provide advanced notification to the Director. The permittee shall not substitute an alternative demonstration of financial responsibility from that which the Director has approved, unless he or she has previously submitted evidence of that alternative demonstration to the Director, with approval of this permit, and the Director notifies him or her that the alternative demonstration

of financial responsibility is acceptable. The financial responsibility mechanism shall be updated upon request of the Director.

2. Insolvency

In the event of:

a. The bankruptcy of the trustee or the institution issuing the financial mechanism; or

b. The suspension or revocation of the authority of the trustee institution to act as trustee; or

c. The loss of authority of the institution issuing the financial mechanism to issue such an instrument, the permittee must notify the Director within ten (10) business days. The owner or operator must establish other financial assurance or liability coverage acceptable to the Director within 60 business days after such an event. An owner or operator must also notify the Director by certified mail of the commencement of voluntary or involuntary proceedings under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within 10 business days after the commencement of the proceedings. A guarantor or a corporate guarantee must make

such a notification if it is named as debtor, as required under the terms of the guarantee.

J. CORRECTIVE ACTION PLAN

1. Compliance

The permittee shall comply with the approved corrective action plan and with 40 C.F.R §144.55 and §146.7. For this permittee, corrective actions will be needed if a well fails the mechanical integrity test or if there is upward fluid migration. If the above events do not occur, corrective actions will not be required.

2. Injection Commencement

The permittee shall not commence injection in the new well until all corrective actions have been taken in accordance with 40 C.F.R §144.55.

3. Upward Fluid Migration

Should upward fluid migration occur through the well bore of any previously unknown, improperly plugged, or unplugged well due to injection of permitted fluids, injection will be shut-in until proper plugging can be accomplished. Any flowage from such undiscovered wells will be considered

noncompliance with this permit. Should any problems develop in the injection well, injection will be shut-in until such repairs can be made to remedy the situation.

K. APPEAL OF PERMIT

1. General

Pursuant to 40 C.F.R. §124.19, the permittee may petition the Environmental Appeals Board to review this permit. This request must be made, in writing, within 30 business days of issuance of this permit. The permittee may appeal this permit based upon the following conditions:

a. If the permittee supplied comments on the draft of this permit or participated in a public hearing concerning this permit, it may petition the Environmental Appeals Board to review any condition of this permit.

b. If the permittee failed to supply public comments, it may petition for an administrative review only to the extent of the changes from the draft permit to the final permit.

2. Contents of Appeal

The petition shall include a statement of the reasons supporting the review, including a demonstration that any issues being raised were raised during the public comment period (including any public hearing) to the extent required by 40 C.F.R. Parts 124, 144, 146, and 147 and when appropriate, a showing that the condition in question is based on:

a. A finding or fact or conclusion of law which is clearly erroneous, or

b. An exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its discretion, review.

3. Prerequisite to Judicial Review

A petition to the Environmental Appeals Board as described above is, under 5 U.S.C. 704, a prerequisite to the seeking of judicial review of any final EPA action regarding this permit. For purposes of a judicial review under the UIC program, final EPA action occurs when a final permit decision is issued or denied by EPA and EPA review procedures as stated in Part I, Section K.2 above are exhausted. Final permit decisions shall be issued by the Regional Administrator:

a. When the Environmental Appeals Board issues notice to the permittee that review has been denied;

b. When the Environmental Appeals Board issues a decision on the merits of the appeal and the decision does not include a remand of the proceedings; or

c. Upon the completion of remand proceedings if the proceedings are remanded, unless the Environmental Appeals Board's remand order specifically provides that appeal of the remand decision will be required to exhaust administrative remedies.

L. DEFINITIONS

1. Abandoned Wells

Abandoned Well means a well whose use has been permanently discontinued or which is in a state of disrepair such that it cannot be used for its intended purpose or for observation purposes.

2. Application

Application means the EPA standard national forms for applying for a permit, including any additions, revisions or modifications to the forms; or forms approved by EPA for use in approved States, including any approved modifications or revisions.

3. Aquifer

Aquifer means a geological "formation," group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.

4. Casing

Casing means a pipe or tubing of appropriate material, of varying diameter and weight, lowered into a borehole during or after drilling in order to support the sides of the hole and thus prevent the walls from caving, to prevent loss of drilling mud into porous ground, or to prevent water, gas, or other fluid from entering or leaving the hole.

5. Cementing

Cementing means the operation whereby a cement slurry is pumped into a drilled hole and/or forced behind the casing.

6. Class I Well

a. A Class I Well means a well used by generators of hazardous waste or operators of hazardous waste management facilities to inject hazardous waste beneath the lower-most formation containing within one quarter mile of the well bore an underground source of drinking water; or

b. Other industrial and municipal disposal wells which inject fluids beneath the lower-most formation containing, within one quarter mile of the well bore, an underground source of drinking water.

7. Class II Well

A Class II Well means a well which injects fluids:

b. Which are brought to the surface in connection with conventional oil or natural gas production or natural gas storage operations and may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection; or

c. For enhanced recovery of oil or natural gas; or

d. For storage of hydrocarbons which are liquid at standard temperature and pressure.

8. Class III Well

A Class III Well means a well which injects for:

a. Mining of sulfur by the Frasch process:

b. In-situ production of uranium or other metals. This category includes only in-situ production from ore bodies which have not been conventionally mined. Solution mining of conventional mines such as stopes leaching is included in Class V.

c. Solution mining of salts or potash.

9. Class IV Well

A Class IV Well means:

a. A well used by generators of hazardous waste or of radioactive waste, by owners or operators of hazardous waste management facilities, or by owners or operators of radioactive waste disposal sites to dispose of hazardous waste or radioactive waste into a formation which within one quarter (1/4) mile of the well contains an underground source of drinking water; or

b. A well used by generators of hazardous waste or of radioactive waste, by owners or operators of hazardous waste management facilities, or by owners or operators of radioactive waste disposal sites to dispose of hazardous waste or radioactive waste above a formation which within one quarter (1/4) mile of the well contains an underground source of drinking water; or

c. A well used by generators of hazardous waste or owners or operators of hazardous waste management facilities to dispose of hazardous waste which cannot be classified under 40 C.F.R. §146.5(a)(1) or §146.5(d)(1) and (2) (e.g., wells used to

dispose of hazardous wastes into or above a formation which contains an aquifer which has been exempted pursuant to §146.04).

10. Class V Well

A Class V Well means a well not included in Class I, II, III or IV.

11. Composite Sample

A Composite Sample is a combination of not less than 8 portions, of at least 100 mls., collected over the full time period specified in this permit. The composite sample must be flow proportioned by either time interval between each aliquot or by volume as it relates to effluent flow at the time of sampling or total flow since collection of the previous aliquot. Aliquots may be collected manually or automatically.

12. Confining Bed

Confining bed means a body of impermeable or distinctly less permeable material stratigraphically adjacent to one or more aquifers.

13. Confining Zone

Confining Zone means a geological formation, group or formations, or part of a formation that is capable of limiting fluid movement above an injection zone.

14. Contaminant

Contaminant means any physical, chemical, biological, or radiological substance or matter in water.

15. Daily Average of Parameter Monitored Continuously

Daily Average of Parameter Monitored Continuously means the sum of values observed and recorded periodically as specified in this permit, divided by the total number of values observed and recorded during that day.

16. Daily Average of Parameters Not Monitored Continuously

Daily Average of Parameters Not Monitored Continuously means the sum of all daily observed and recorded values divided by the total number of values observed and recorded during that day.

17. Daily or Monthly Maximum Value

Maximum Value means the highest value recorded during the day or month, respectively. For continuously monitored parameters the highest value recorded is the highest instantaneous value for the continuous monitoring recording.

18. Daily or Monthly Minimum Value

Minimum Value means the lowest value recorded during the day or month, respectively. For continuously monitored parameters, the lowest value recorded is the lowest instantaneous value from the continuous monitoring recording.

19. Director

Director means the Director, Division of Enforcement and Compliance Assistance of EPA Region II, unless at some time in the future the State receives authority to administer the UIC program and assumes jurisdiction over the permit; at which time, the Director of the State program receiving authorization becomes the Director.

20. Drilling Mud

Drilling Mud means a heavy suspension used in drilling an "injection well", introduced down the drill pipe and through the drill bit.

21. Exempted Aquifer

Exempted Aquifer means an "aquifer" or its portion that meets the criteria in the definition of "underground source of drinking water" but which has been exempted according to the procedures in 40 C.F.R. §144.7.

22. Facility or Activity

Facility or Activity means any UIC "injection wells", or any other facility or activity that is subject to regulation under the UIC program.

23. Fault

Fault means a surface or zone of rock fracture along which there has been displacement.

24. Flow Rate

Flow Rate means the volume per unit time given to the flow of gases or other fluid substance which emerges from an orifice, pump, turbine or passes along a conduit or channel.

25. Fluid

Fluid means any material or substance which flows or moves whether in a semi-solid, liquid, sludge, gas, or any other form or state.

26. Formation

Formation means a body of consolidated or unconsolidated rock characterized by a degree of lithologic homogeneity which is prevailingly, but not necessarily, tabular and is mappable on the earth's surface or traceable in the subsurface.

27. Formation Fluid

Formation Fluid means "fluid" present in a “formation" under natural conditions as opposed to introduced fluids, such as "drilling mud".

28. GPM

GPM means gallons per minute.

29. Grab Sample

Grab Sample means a single portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the monitored activity.

30. Injection Tubing or Tubing

Injection Tubing means a system of pipes, of appropriate material, inserted into the well through the casing to convey the injection fluid to the injection zone and to prevent casing degradation.

31. Injection Zone

Injection Zone means a geological "formation", group of formations, or part of a formation receiving fluids through a well.

32. Monthly Average of Parameters Monitored Continuously

Monthly Average of Parameters Monitored Continuously means the sum of values observed and recorded periodically as specified in this permit, divided by the total number of values observed and recorded during that month.

33. Monthly Average of Parameters Monitored Daily

Monthly Average of Parameters Monitored Daily means the sum of all daily observed and recorded values divided by the total number of values observed and recorded during that month.

34. Owner or Operator

Owner or Operator means the owner or operator of any "facility or activity" subject to regulation under the UIC program.

35. Packer

Packer means a device lowered into a well to produce a fluid-tight seal.

36. Person

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

37. Plugging

Plugging means the act or process of stopping the flow of water, oil or gas into or out of a formation through a borehole or well penetrating that formation.

38. Plugging Record

Plugging Record means a systematic listing of permanent or temporary abandonment of water, oil, gas, test, exploration, and waste injection wells; and may contain a well log, description of amounts, and types of plugging material used, the method employed for plugging, a description of formations which are sealed and a graphic log of the well showing formation location, formation thickness, and location of plugging structures.

39. Pressure

Pressure means the total load or force per unit area acting on a surface.

40. PSIA

PSIA means pound per square inch absolute.

41. PSIG

PSIG means pounds per square inch gauge.

42. Schedule of Compliance

Schedule of Compliance means a schedule or remedial measures included in a "permit" including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the "appropriate Act and regulations".

43. SDWA

SDWA means the Safe Drinking Water Act (Pub. L. 93-523, as amended by Pub. L. 96-502: 42 U.S.C. 300f et seq.).

44. Site

Site means the land or water area where any “facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.

45. Surface Casing

Surface Casing means the first string of well casing to be installed in the well.

46. Total Dissolved Solids (TDS)

Total Dissolved Solids (TDS) means the total dissolved (filterable) solids as determined by use of the method specified in 40 C.F.R. Part 136.

47. UIC

UIC means the Underground Injection Control Program under Part C of the Safe Drinking Water Act, including an "approved State program".

48. Underground Injection

Underground Injection means a "well injection".

49. Underground Source of Drinking Water (USDW)

Underground Source of Drinking Water (USDW) means an aquifer or its portion:

a. (1) Which supplies any public water system; or

(2) Which contains a sufficient quantity of ground water to supply a public water system: and

(a) Currently supplies drinking water for human consumption; or

(b) Contains fewer than 10,000 mg/l total dissolved solids; and

b. Which is not an exempted aquifer.

50. Well Injection

Well Injection means the subsurface emplacement of fluids through a bored, drilled or driven well; or through a dug well, where the depth of the dug well is greater than the largest surface dimension.

51. Well Monitoring

Well monitoring means the measurement, by on-site instruments or laboratory methods, of the quality of water in a well.

52. Well Plug

Well Plug means a watertight and gas-tight seal installed in a borehole or well to prevent movement of fluids.

53. Well Stimulation

Well stimulation means several processes used to clean the well bore, enlarge channels, and increase pore space in the interval to be injected, thus making it possible for wastewater to move more readily

into the formation, and includes (1) surging, (2) jetting, (3) blasting (4) acidizing, and (5) hydraulic fracturing.

PART II.

WELL-SPECIFIC CONDITIONS FOR UIC PERMITS

A. Construction Requirements

1. Notwithstanding any other provision of this permit, the injection wells shall inject only into a formation(s) which is separated from any underground source of drinking water (USDW) by a confining zone that is free of known open faults or fractures within the Area of Review.

2. Casing and Cementing

This injection well represents a new non-hazardous Class I disposal well. The 12 or 14 inch diameter surface casing will be set into the confining layer and cemented to grade; and the 6 inch diameter long string casing will be set at a minimum of 240 feet below grade and cemented to grade, as per the permit application specifications. As per permit application specifications, an injection well will be drilled to approximately 260 feet from grade. The injection zone will be screened with a continuous

wire screen. Gravel pack will be provided, surrounding the screen. The well will be cased to prevent the movement of fluids into or between any USDW's. The casing and cement used in the rework of any well shall be designed for the life expectancy of the well.

3. Injection Formation Data

The depth of the injection zone is 260 feet from grade. Geophysical logs with marked formation tops will be submitted to the Director following construction of the well. Other formation data will be submitted to the Director, following construction of the well. This includes:

a) the injection formation (Salt Water Aquifer) fluid analysis for nitrites, nitrates, sulfates, sodium, chloride, specific conductance, specific gravity, total dissolved solids, pH, volatile organic compounds (VOC), semi-volatile organic compound (SVOC),and dissolved oxygen;

b) the formation fluid pressure for the injection zone, and the static fluid level in the injection well;

c) the porosity and permeability of the injection zone.

4. USDW Formation Data

Fluid analysis of the USDW shall be as follows:

a) Fluid analysis of the salt water lens, if any, just above the top of the confining zone, located in the Upper Glacial Aquifer, will be submitted to the Director. This includes fluid analysis,

sampled just below the lens, for nitrite, nitrate, sulfate, sodium, chloride, specific conductance, specific gravity, total dissolved solids, pH, VOC's, SVOC's, and dissolved oxygen.

b) Fluid analysis of the Upper Glacial Aquifer above the salt water lens will be submitted to the Director. This includes fluid analysis for nitrites, nitrates, sulfates, sodium, chloride, specific conductance, specific gravity, total dissolved solids, and dissolved oxygen.

5. Confining Unit Analysis

A core sample of the confining zone shall be collected and analyzed for porosity and permeability and analyzed by a geotechnical laboratory. In addition, a log analysis of the thickness, porosity and permeability of the confining zone shall be prepared by a knowledgeable log analyst and submitted to the Director.

6. Mechanical Integrity

The SCWA is required to run a mechanical integrity test on its injection well, as follows:

a) The integrity of the casing must be tested by injecting potable water into the well through two (2) inch diameter pipe, with inflatable seals, at the surface and as near to the top of the screened

interval as possible, but in no case at a depth shallower than 210 feet below grade. The well casing must then be pressured up to a minimum pressure of 100 PSIG. The pressure must then be monitored for a period of one hour. The well passes the mechanical integrity test if the pressure inside the well casing does not drop more than 5% in one hour.

b) In order to demonstrate that there is no fluid movement, that could endanger USDWs, outside the well casing, the SCWA must submit the following logs, accompanied by a report prepared by a knowledgeable well expert, who interprets the results of the logs:

(1) Cementing Records and Cement Bond Logs: The Cementing Records for the cementing of the surface casing and long string casing shall be submitted. The Cementing Records should verify placement and location of cement and that minimum construction standards have been met.

Subsequent mechanical integrity tests (pressure test) must be run no later than five (5) years after the previous test.

7. Logs and Tests

In addition to the logs required to demonstrate mechanical integrity, the following logs and/or tests shall also be conducted during the drilling and construction of the well:

a. Open Hole Logs.

The following logs shall be run from Total Depth to the surface: Gamma Ray and/or Caliper.

8. Completion Reports

Once well construction is completed, the completion information must be filled out on EPA Form 7520-9, Completion Form for Injection Wells, with the appropriate attachments. A copy of EPA form 7520-9 is attached with the permit.

The results of those activities required in Part II, Section A, 1 through 8 of the permit must be summarized and submitted to the Director prior to the commencement of injection operations as part of the Completion Reports.

B. Operating Requirements

1. Injection Formation

Injection shall be limited to the confined Salt Water Aquifer, which is approximately 50 to 100 feet thick. The top of the Salt Water Aquifer lies at a depth of 150 to 200 feet below the surface.

2. Injection Pressure Limitations

As injection will be done by gravity only, the maximum injection pressure at the ground surface shall not exceed 0 PSIG.

3. Injection Volume Limitation

Maximum injected volume shall not exceed 1,500 gpd within any 24 hour period. An average injection volume will be limited to 1,000 gpd. The average injection volume is measurable on a monthly basis.

4 Additional Injection Limitations

Injection between the outermost casing protecting USDW's and the well bore is prohibited, as is injection into any USDW.

The permittee is authorized to inject Spent Brine/Rinse Water from the Ion Exchange Nitrate Removal Drinking Water Treatment System, which will result in spent brine.

Injection of untreated leachate, hazardous waste or any other fluid is prohibited, without prior written approval from EPA.

C. Monitoring

1. Monitoring Wells

Monitoring wells shall be installed and sampled pursuant to the requirements listed in Attachment # 3.

2. Injection Well Samples and Measurements

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The analytical methods must be EPA-approved or, other method with prior

approval by EPA. The, detection levels should be appropriate for each analyte, and the samples must be analyzed by a certified laboratory. The permittee shall monitor the injected fluids as follows:

Parameters	Frequency	Sample Type
Injection Volume	Continuous	Recorder
Injection Rate	Continuous	Recorder
Specific Gravity	Monthly	Grab
Temperature	Monthly	Grab
Chloride	Monthly	Grab
Sodium	Monthly	Grab
Nitrate	Monthly	Grab
Nitrite	Monthly	Grab
Sulfate	Monthly	Grab
Specific Conductance	Monthly	Grab
pH	Monthly	Grab
VOC's	Annually	Grab
SVOC's	Annually	Grab

Prior to injection operation start-up, a grab sample of treated effluent from the Brown's Hill Road Ion Exchange Nitrate Removal Drinking Water Treatment System, to be operated by the Production Control Department of the Suffolk County Water Authority (SCWA), 180 Fifth Avenue, Bay Shore,

New York. Specific Gravity, Temperature, Sodium, Nitrate, Nitrite, Sulfate, Chloride, Calcium, Specific Conductance, pH, and Volatile Organic Compounds, Semi-Volatile Organic Compounds.

PLAN FOR WELL FAILURE

In the event of a well failure, the well will be abandoned in place, as per the applicable American Water Works Association and NYSDEC standards. If the injection process must stop because of a well failure, the SCWA is capable of holding 750 gallons of waste on site and having it hauled away and disposed by a licensed contractor. Notification of immediate shutdown shall be provided to EPA, Region 2.

D. Reporting

1. Quarterly Reports

The SCWA shall submit quarterly reports to the Director containing the results of monitoring well data specified in Condition C of Part II of this Permit. The data should be reported for each quarter. The ending of each quarter is as follows: December 31, March 31, June 30, and September 30. Reports are due on January 30, April 30, July 30, and October 30, of each year. The reports shall be mailed to:

U.S. Environmental Protection Agency

290 Broadway, 20th Floor

New York, New York 10007-1866

Attn.: Chief, Ground Water Compliance Section

2. Reports on Well Tests and Workovers

In the first quarterly report after the activity, the SCWA shall report to the Director the results of the following:

a. Mechanical integrity tests; and

b. Other tests required by this permit.

E. Plugging and Abandonment

1. The permittee shall plug and abandon the wells as provided in the approved plugging and abandonment plan (EPA Form 7520-14) in Attachment 1 of this permit and in accordance with the reporting and notification provisions of Section G, Part I of this permit.

2. Plugging and abandonment shall be conducted in such a manner to prevent movement of fluids into an underground source of drinking water and to prevent water from one underground source of drinking water to move into another.

F. Financial Responsibility

1. The permittee shall maintain continuous compliance with the requirement to maintain financial responsibility and resources to close, plug and abandon the underground injection wells in the amount of at least $ 10,650 and in accordance with the provisions of Conditions I of Part I of this permit. The permitted financial responsibility mechanism is specified in Permit Attachment #2.

PLUGGING AND ABANDONMENT PLAN

PERMIT ATTACHMENT #1

Plugging and Abandonment Plan: The SCWA will follow the current practices of the American Water Works Association and of the New York State Department of Environmental Conservation. This includes placing gravel pack within the screen zone of the injection well, and neat cement grout above the gravel pack to the surface. Emplacement of all materials will be by gravity feed, using a tremie pipe. For a six (6) inch diameter, 300-foot deep well, the SCWA anticipates utilizing approximately 58 cubic feet of cement.

FINANCIAL RESPONSIBILITY

PERMIT ATTACHMENT #2

The permittee has demonstrated financial responsibility in the amount of at least $ 10,650 and must continuously maintain financial responsibility. The permittee shall provide a financial update by August 31 of each year, for as long as the permit is in effect.

MONITORING WELLS

PERMIT ATTACHMENT #3

Two (2) groundwater monitoring wells shall be installed and monitored quarterly for the following constituents, utilizing EPA-approved analytical methods. This monitoring requirement also applies to the two existing production wells, which are to be utilized, for purposes of this permit, as monitoring wells. The appropriate analytical methods that achieve quantitative detection for the following parameters, should be used:

Parameters	Frequency	Sample Type
Sodium	Quarterly	Grab
Chloride	Quarterly	Grab
Nitrate	Quarterly	Grab
Nitrite	Quarterly	Grab
Sulfate	Quarterly	Grab
Specific Conductance	Quarterly	Grab
Specific Gravity	Quarterly	Grab
Dissolved Oxygen	Quarterly	Grab
Total Dissolved Solids	Quarterly	Grab
pH	Quarterly	Grab
VOC's	Annually	Grab
SVOC's	Annually	Grab

1. One (1) groundwater monitoring, monitoring well no. 1, well shall be located approximately seven (7) feet south of the proposed injection well and approximately 22 feet north of existing production well no. 3. Monitoring well no. 1 shall be constructed in the injection zone. Existing production well no. 3, which is screened in the Upper Glacial Aquifer, shall be utilized as a monitoring well.

2. One (1) groundwater monitoring well shall be located approximately eight (8) feet north of the proposed injection well and approximately thirty-two (32) feet south of existing production well no. 2 This monitoring well, monitoring well no. 2, shall be constructed in the salt water lens above the injection zone, if such a salt water lens is encountered. Existing production well no.2 is screened in the Upper Glacial Aquifer. Existing production well no. 2 shall be utilized as a monitoring well.

The monitoring wells must be double-cased into the confining layer between the Upper Glacial Aquifer and the injection zone.

Hydrostatic fluid levels must also be assessed.

Results of groundwater monitoring will be submitted with quarterly reports according to the provisions of Section D, Part II of this permit.